

AMENDMENTS TO THE CLAIMS

This listing of claims supersedes all prior versions and listings of claims in this application:

LISTING OF CLAIMS:

1. (Currently Amended) A three-dimensional image display device, comprising:
a display panel which has a plurality of pixel sections each of which included includes [[a]] an L pixel displaying an image for the left eye and [[a]] an R pixel displaying an image for the right eye, said pixel sections being provided periodically in a first direction, forming a left perpendicular line segment and a right line segment wherein said line segments are perpendicular to a first direction; and
an optical unit that consists of a plurality of lenses that refract light emitted from said pixels,

wherein said optical unit refracts the light emitted from said pixels ~~and emits the light in directions different from each other to make light emitted from R pixels the light from different pixels incident to the right eye and light emitted from L pixels incident on the left eye eyes~~ of a viewer and to allow said viewer to recognize a three-dimensional image, and the lens pitch of said optical unit is less than 0.2mm.

2. (Currently Amended) A three-dimensional image display device, comprising:

a display panel which has a plurality of pixel sections each of which includes a pixel displaying an image for the left eye and a pixel displaying an image for the right eye, said pixel sections being provided periodically in a first direction, forming a left line segment and a right line segment, wherein said line segments are perpendicular to said first direction; and

an optical unit that consists of a plurality of lenses that refract light emitted from said pixels,

wherein said optical unit refracts the light emitted from said pixels and emits the light in directions different from each other to make the light from different pixels incident to the right and left eyes of a viewer and to allow said viewer to recognize a three-dimensional image, and wherein the when a distance between the surface of said optical unit and a line segment which corresponds to the longest width in said first direction of the three-dimensional visible range from which said viewer can recognize the three-dimensional image perpendicular distance from a most peripheral line segment, out of line segments at the surface of said optical unit to the plane of the viewer's eyes, is set to a distance OD (mm) and the lens pitch of said optical unit is set to L (mm), wherein said distance OD is 350mm or less, and said distance OD and said lens pitch L satisfy the following expression:-

$$L \leq 2 \times OD \times \tan(1') (0.000291).$$

3. (Original) A three-dimensional image display device, comprising:

a display panel which has a plurality of pixel sections each of which includes a pixel displaying an image for the left eye and a pixel displaying an image for the right eye, said pixel sections being provided periodically in a direction; and

an optical unit that consists of a plurality of lenses that refract light emitted from said pixels,

wherein said optical unit refracts the light emitted from said pixels and emits the light in directions different from each other to make the light from different pixels incident to the right and left eyes of a viewer and to allow said viewer to recognize a three-dimensional image, and the lens pitch of said optical unit is 0.124mm or less.

4. (Previously Presented) A three-dimensional image display device, comprising:

a display panel which has a plurality of pixel sections each of which includes a pixel displaying an image for the left eye and a pixel displaying an image for the right eye, said pixel sections being provided periodically in a direction; and

an optical unit that consists of a plurality of lenses that refract light emitted from said pixels,

wherein said optical unit refracts the light emitted from said pixels and emits the light in directions different from each other to make the light from different pixels incident to the right and left eyes of a viewer and to allow said viewer to recognize a three-dimensional image,
wherein a shortest distance between a three-dimensional visible range, from which said viewer

can recognize the three-dimensional image and the surface of said optical unit is set to ND (mm)
~~wherein a distance from a viewer within a three-dimensional visible range to the surface of said optical unit becomes a minimum distance, ND,~~

~~and wherein said distance is set to ND (mm) and the lens pitch of said optical unit is set to L (mm), said distance ND is 213 mm or less , and said distance ND and said lens pitch L satisfy the following expression:~~

$$L \leq 2 \times ND \times \tan(1').(0.000291).$$

5. (Previously Presented) The three-dimensional image display device according Claim 1, wherein said pixel sections consist of two types of pixels that are the pixels for the right eye and the pixel for the left eye.

6. (Previously Presented) The three-dimensional image display device according to Claim 1, wherein said optical unit is a lenticular lens.

7. (Previously Presented) The three-dimensional image display device according to Claim 1, wherein said optical unit is a fly-eye lens.

8. (Previously Presented) The three-dimensional image display device according to Claim 1, wherein said display panel is a liquid crystal display panel.

9. (Previously Presented) The three-dimensional image display device according to Claim 2, wherein said pixel sections consist of two types of pixels that are the pixels for the right eye and the pixel for the left eye.

10. (Previously Presented) The three-dimensional image display device according to Claim 2, wherein said optical unit is a lenticular lens.

11. (Previously Presented) The three-dimensional image display device according to Claim 2, wherein said optical unit is a fly-eye lens.

12. (Previously Presented) The three-dimensional image display device according to Claim 2, wherein said display panel is a liquid crystal display panel.

13. (Previously Presented) The three-dimensional image display device according to Claim 3, wherein said pixel sections consist of two types of pixels that are the pixels for the right eye and the pixel for the left eye.

14. (Previously Presented) The three-dimensional image display device according to Claim 3, wherein said optical unit is a lenticular lens.

15. (Previously Presented) The three-dimensional image display device according to Claim 3, wherein said optical unit is a fly-eye lens.

16. (Previously Presented) The three-dimensional image display device according to Claim 3, wherein said display panel is a liquid crystal display panel.

17. (Previously Presented) The three-dimensional image display device according to Claim 4, wherein said pixel sections consist of two types of pixels that are the pixels for the right eye and the pixel for the left eye.

18. (Previously Presented) The three-dimensional image display device according to Claim 4, wherein said optical unit is a lenticular lens.

19. (Previously Presented) The three-dimensional image display device according to Claim 4, wherein said optical unit is a fly-eye lens.

20. (Previously Presented) The three-dimensional image display device according to Claim 4, wherein said display panel is a liquid crystal display panel.

21. (Previously Presented) A portable terminal device, comprising the three-dimensional image display device according to Claim 1.

22. (Previously Presented) A portable terminal device, comprising the three-dimensional image display device according to Claim 2.

23. (Previously Presented) A portable terminal device, comprising the three-dimensional image display device according to Claim 3.

24. (Previously Presented) A portable terminal device, comprising the three-dimensional image display device according to Claim 4.

25. (Original) The portable terminal device according to Claim 21, wherein said device is any one of a cellular phone, a personal information terminal, a game machine, a digital camera, and a digital video camera.

26. (Original) The portable terminal device according to Claim 22, wherein said device is any one of a cellular phone, a personal information terminal, a game machine, a digital camera, and a digital video camera.

27. (Original) The portable terminal device according to Claim 23, wherein said device is any one of a cellular phone, a personal information terminal, a game machine, a digital camera, and a digital video camera.

28. (Original) The portable terminal device according to Claim 24, wherein said device is any one of a cellular phone, a personal information terminal, a game machine, a digital camera, and a digital video camera.

29. (Cancelled).

30. (Currently Amended) A three-dimensional image display device, comprising:
a display panel which has a plurality of pixel sections each of which included a pixel displaying an image for the left eye and a pixel displaying an image for the right eye, said pixel sections being provided periodically in a direction, forming a perpendicular line segment, wherein a viewer holds the three-dimensional image display device in hand and views the three-dimensional image while he/she moves; and

an optical unit that consists of a plurality of lenses that refract light emitted from said pixels,

wherein said optical unit refracts the light emitted from said pixels and emits the light in directions different from each other to make the light from different pixels incident to the right

and left eyes of a viewer, respectively, and to allow said viewer to recognize a three-dimensional image, and the lens pitch of said optical unit is less than 0.2mm.

31. (Previously Presented) A three-dimensional image display device, comprising:

a display panel which has a plurality of pixel sections each of which includes a pixel displaying an image for the left eye and a pixel displaying an image for the right eye, said pixel sections being provided periodically in a direction, wherein a viewer holds the three-dimensional image display device in hand and views the three-dimensional image while he/she moves; and

an optical unit that consists of a plurality of lenses that refract light emitted from said pixels,

wherein said optical unit refracts the light emitted from said pixels and emits the light in directions different from each other to make the light from different pixels incident to the right and left eyes of a viewer and to allow said viewer to recognize a three-dimensional image, and wherein the perpendicular distance from a most peripheral line segment out of line segments at the surface of said optical unit to the plane of the viewer's eyes, is set to a distance OD (mm) and the lens pitch of said optical unit is set to L (mm), wherein said distance OD is 350mm or less, and said distance OD and said lens pitch L satisfy the following expression:

$$L \leq 2 \times OD \times \tan(1') \text{ (0.000291).}$$